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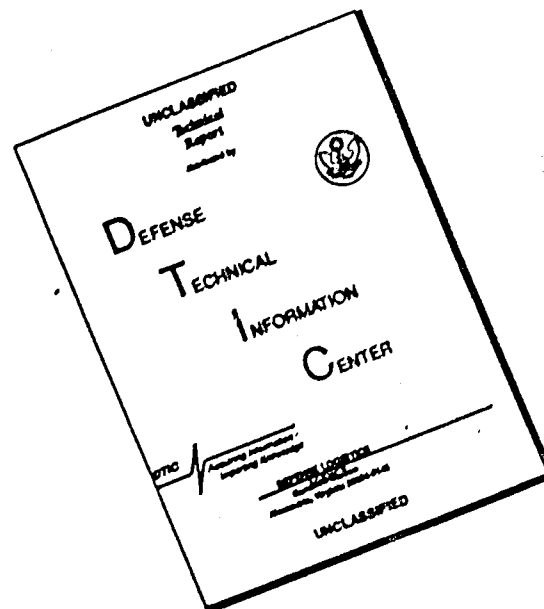
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STUDY TITLE: AMMUNITION PRODUCTION MANAGEMENT; A STUDY IN COORDINATED JOINT SERVICE MANAGEMENT TECHNIQUES

STUDY PROBLEM/QUESTION: To evaluate the composition of the DOD ammunition production base; previous individual service management techniques; and a recently proposed, and implemented, attempt at achieving joint service coordination and management of the over-all ammunition production base.

STUDY REPORT ABSTRACT:

This report is an examination of the composition, valuation and, specifically, the management aspects of the ammunition production base under the cognizance of all services from its inception to the present. It reviews the management structures within the three services and reports on the various studies conducted on both the condition and the management of the total ammunition production base. The most recent development is a coordinated management proposal that has come about due to a 1972 tri-service study which recommended establishment of a standing group composed of general officers at the operating level of each of the three services. This panel is charged with formulating coordinated policy from which guidance to all elements of the ammunition production base will flow. This structure, titled the Joint Conventional Ammunition Program Coordinating Group (JCAP/CG), represents a new concept in achieving effective and efficient management while not interfering with the management prerogatives of the individual services.

KEY WORDS: MATERIEL PRODUCTION AMMUNITION PRODUCTION BASE
JOINT REQUIREMENTS MANAGEMENT TECHNIQUES

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Program Management Course Student Study Program

AMMUNITION PRODUCTION BASE MANAGEMENT
A STUDY IN COORDINATED JOINT SERVICE
MANAGEMENT TECHNIQUES
PMC 73-2

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AMMUNITION PRODUCTION BASE MANAGEMENT

A STUDY IN COORDINATED JOINT SERVICE MANAGEMENT TECHNIQUES

**An Executive Summary
of a
Study Report
by**

**Lawrence E. Sisterman
Major US Army**

November 1973

**Defense Systems Management School
Program Management Course
Class 73-2
Fort Belvoir, Virginia 22060**

EXECUTIVE SUMMARY

This study report is a brief analysis of the conditions and complications existant within the total Department of Defense conventional ammunition production base and its management aspects.

The report examines the history of the ammunition producing facilities as they were developed in World War II, and as they have progressed up to and through the Vietnam Era. It also examines the management structures utilized by the Army, Navy, and the Air Force during the Vietnam conflict along with the current composition of the production base within the cognizance of the three services.

In response to several Department of Defense studies and reviews conducted during the late 1960's, a Joint Panel for the Coordinated Management of the DOD Ammunition Production Base was formed in 1971 to look into possibilities for improving the effective management of the total base.

The recommendations of the panel resulted in the formation of a standing cross-service matrix organization, titled the Joint Conventional Ammunition Production Coordinating Group, (JCAP/CG), consisting of general officers from the operating levels in each of the three services.

When fully implemented, this organization and its subordinate staff(s) should form a highly workable, effective decision-making body to assure coordination and cooperation in the management of the total ammunition base. Its success should yield broad acceptance by providing the management of the base within the traditional command and control responsibilities jealously guarded by each service.

AMMUNITION PRODUCTION BASE MANAGEMENT
A STUDY IN COORDINATED JOINT SERVICE MANAGEMENT TECHNIQUES

STUDY REPORT

Presented to the Faculty
of the
Defense Systems Management School
in Partial Fulfillment of the
Program Management Course
Class 73-2

by
Lawrence E. Sisterman
Major US Army

November 1973

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Mr. Edward Jordan, Executive Director; Joint Convention Ammunition
Production Coordinating Group, Rock Island, Illinois.

AMMUNITION PRODUCTION BASE MANAGEMENT
A STUDY IN COORDINATED JOINT SERVICE MANAGEMENT TECHNIQUES*

CHAPTER I

INTRODUCTION

Perhaps the most controversial and often maligned defense expenditure throughout the history of the twentieth century United States has been the investment in the conventional ammunition production base. This highly expensive, almost totally government owned, base has suffered the multiple cycles of design/redesign, development, creation, activation and subsequent layaway four times in the last fifty years. Each cycle was fraught with the same traumatic experiences, all of which were believed unique at the time, but which eventually emerged with each succeeding conflict.

This study is aimed at analyzing an approach now being undertaken within the Department of Defense to obtain the best management techniques possible for this complex and far flung industrial base within the framework of the three individual services and without overriding the existing prerogatives of any service. The proposed approach is unique and reflects an epitome in coordination previously believed unworkable--and still thought to be so in some circles--but which shows promise for future expansion and application in this and other commodities.

The discussion approach to be used will analyze the history of the production base; the events leading up to the Department of Defense

***ABSTAINER**

This study represents the views, conclusions and recommendations of the author and does not necessarily reflect the official opinion of the Defense Systems Management School nor the Department of Defense.

revised managerial direction; a discussion of the management methods being planned and pursued; and finally an evaluation of the initial results of the program and its potential.

CHAPTER 2

HISTORICAL PERSPECTIVES

During World War I the munitions industry, as we now call it, was minute. It consisted primarily of six Army arsenals, a few Navy ordnance depots, and several private contractors who assumed the job of setting up specialized manufacturing lines to build ammunition for use of the Allied Expeditionary Forces (AEF). Significantly, even these sources did not produce sufficient materials for the AEF until the Spring of 1918—nearly eighteen months after mobilization was begun. We fought the large part of the war with British and French supplied equipment. (1:pp3-20)

Between the two world wars the lack of funds and the "Merchant of Death" syndrome combined to almost totally eradicate the munitions production base to a few civil servants in the various depots and arsenals. These people were primarily devoted to developing methods and techniques for production. Almost no American production base existed prior to the Fall of France, and what did exist was largely committed to British contracts for Britain's conduct of the early stages of World War II. (1:pp40-64)

During the Battle of Britain, the Halls of Congress echoed with the complaints concerning the long mobilization period and the shortages of munitions for our fighting forces, but little was said concerning the many years of budget cuts and complacency on the defense ammunition production base posture. Fortunately, some planning had been effected by both the Army and the Navy, and when funds were finally made available in 1940, they proceeded to develop an in-house capability along with various civilian resources for ammunition production. Both approaches

required large expenditures to buy or build plants and machinery and to procure managerial know-how. Outside of sporting ammunition, there were no civilian ammunition production sources. (2:pp9-20)

Consequently, the major efforts by both services were devoted to developing and building a vast complex of government owned-contractor operated (GOCO) and government owned-government operated (GOGO) ammunition producing plants to supply the massive requirements of World War II. These plants were fully self-contained Class II installations designed for mass production of ammunition end items. The GOCO plants were built entirely by operating contractors to government specifications with federal funds for government ownership. The GOCO's and GOGO's were augmented by many private concerns as producers of some end items, and, more frequently, as sub-producers of components to the primary mass producers, the GOCO's. In general, the previously existing arsenals and depots assumed the role of technical advisors to the primary producers, while their production lines concentrated on problem areas and experimental methods as well as on policies and procedures.

Subsequent to the hostilities of World War II, the largest portion of the munitions base was dismantled, sold off, and simply ignored until 1950. Special legislation in 1948 did authorize certain reserve retention of government owned facilities, but these were largely retained in an "as is" standby condition. The country fell into our well-known mood of complacency, relying on a pre-positioned stockpile of munitions located around the world to satisfy our needs if—and that was then considered a very unlikely "if"—the United States military might would ever again be needed.

In this period, several new factors came upon the scene. The birth of the US Air Force as a separate entity created a new management problem

for the ammunition stockpile and the production base. However during those formative years—and indeed into the decade of the 1960's—the Air Force relied largely on the Army to continue the ammunition development, production, and supply as it had during the previous US Army Air Corps days with only the funding aspects changed.

With the outbreak of the Korean War, the Department of Defense evaluated the management concepts of the ammunition commodity and again found it lacking. The concept of the pre-positioned stockpile was excellent except that during the interim years it had not caught up with the improved weapons, handling techniques, proper distribution, and especially, stock deterioration. To meet the combat emergency, all three services managed to utilize the remainder of the World War II production base to good advantage, but the primary effort for its management remained with the Army and the Navy via the GOCO and GOGO concept. (3:pp2-11)

Subsequent to 1955, the management emphasis of all services toward the ammunition commodity again receded to its pre-war status, with the base further dismantled and the war reserve stockpile manufactured but not further improved. By 1965, history was repeating itself, and again ammunition shortages existed. Crisis management was required, and, as with previous situations, individual techniques were developed, high emphasis placed on the management effort, and the crisis dissolved—all at a very high monetary cost.

CHAPTER 3

THE PRODUCTION BASE DURING THE VIETNAM ERA

A beginning approach to evaluating the broad problem of management of the ammunition production base rests primarily in a clear definition of what the management requirements are. All three services had been exercising this management on an individual basis, relying on inter-service informal coordination for various aspects. The production base management as applied within the services has been quite clearly, but very recently, defined as:

Including those functions pertinent to the receipt and evaluation of ammunition requirements as they affect the production base; production base acquisition or release; quantitative and qualitative capabilities and utilization; modernization and expansion; and associated decision models and management information systems.
(5:p4)

The key elements of this definition can be summarized as the knowledge of the requirements (implying stockpile management), and the ability to determine and control the production sources.

To place the ammunition production base management problem in its proper perspective, it would be well to look into the Department of Defense policies and then at each of the individual service techniques, organizations, and assets.

DOD directives on coordinated procurement practices attempted to eliminate duplicative effort on the parts of the three services and so assigned various commodities, and Federal Supply Classification (FSC) codes within the commodities, to the separate services for basically single manager approach. Under this concept each service would manage the production base and procure materials for the other services on an inter-departmental purchase request basis. (6:p6)

In the ammunition commodity, this directive resulted in the Army absorbing total procurement responsibility for all common multi-service munitions items except for portions of FSC 1310 (40 mm), FSC 1325 (bombs), FSC 1340 (2.75 in and 5 in rockets), and FSC 1390 (specialized naval fuzes and primers). In reality, however, the Army still managed a certain capability to produce a large part of these items as well. For example, even though the Army was not a user of bombs, it retained and managed the only 750 lb. bomb manufacturing line, and a majority of the components for both it and other Air Force or Navy items of material, particularly air deliverable munitions. In essence, the Army was assigned "lead" responsibility for conventional ammunition procurement.

The Navy was assigned procurement responsibility for the majority of those exceptions listed above, as well as its own peculiar requirements pertaining to naval gunnery.

For its part, the Air Force was assigned procurement responsibility only for new development items which would be peculiar to its use, and for which the other services have no existing capability to produce. The Air Force relied very heavily on the Army during the most recent conflict for the majority of its munitions needs.

One peculiar aspect of this assignment policy was that it was only for procurement. In accordance with our earlier definition of the production base management, the requirements aspect remained within the individual services to be transmitted to the procuring service as needed.

In addition, one service, the Army, possessed and managed virtually all of the bulk explosive manufacturing capability which provided the core explosive components to the other services, again on an as needed basis.

The inherent conflict that arises out of the preceding two paragraphs will become more predominant as we progress in this study; however, suffice it to say that the coordination between the three services had to be intense during the Vietnam War and, though it was informal, it was successful only under a crisis management technique. For peacetime and mobilization planning purposes, this coordination obviously takes on another aspect, especially as it pertains to long-range planning for the production base.

At this point it would be well to examine the existing management structures and the capabilities of the three services with regard to the production base.

Within the Army, all the wholesale ammunition manufacturing supply and support aspects are centered within the US Army Materiel Command (AMC) and more specifically, the US Army Munitions Command, now combined with the US Army Weapons Command to form the US Army Armaments Command (ARMCOM) at Rock Island, Illinois. This command now manages twenty-five government owned-contractor operated (GOCO) ammunition manufacturing plants and five special purpose arsenals, all GOCO. These are now all in various stages of active production, standby, or inactive status, and constitute an investment of \$10.8 billion. The Armaments Command operates its own national inventory control for all Army ammunition stocks, as well as assets due out to the other services. (5:ppl-28) In addition, the Army Materiel Command exercises command and control over all of the Army depots in the continental United States, wherein all Army ammunition stocks and a majority of the Air Force stocks are placed in storage.

For its part, the US Navy's management of the conventional ammunition program is centered in the Naval Materiel Command (NMC), but then split among its subordinate systems commands. The primary munitions

manager at the operating level is the Naval Ordnance Systems Command (NAVORD), except for munitions commodities peculiar to aircraft applications, which are managed by the Naval Air Systems Command (NAVAIR). In conjunction with the Naval Supply Systems Command, these two commands functionally operate the major naval production facilities which constitute three GOGO depots, six coastal weapons stations, two ordnance stations, three industrial reserve plants (GOCO), and a torpedo station, most of which are multi-functional, and hence the reason for the intermix in the management structure. Being multi-functional, these installations are not specifically designated to ammunition production or storage alone. The Navy investment in ammunition production facilities represents approximately \$2.5 billion in current (1972) dollars. (5:ppl-28)

As an adjunct to the Navy ammunition management program—though the Naval Materiel Command is primarily responsible for the support of the US Marine Corps—the Corps does directly procure much of its ground munitions requirements from the Army on military interdepartmental purchase basis via direct, but informal, coordination.

The US Air Force commodity management for conventional munitions is unique in that it has no specific government operated production facilities and its management program is also split between two major commands — the Air Force Logistics Command (AFLC) for routine procurement and management of fully developed munitions items, and the Air Force Systems Command (AFSC) for procurement and management of those munitions items in the various developmental stages. Under the former, the chief operative is the Ogden Air Materiel Area (COAMA) for conventional munitions and Warner Robbins Air Materiel Area (WRAMA) for air launched munitions. Under AFSC, the Armament Development and Test Center (ADTC) is the contact point and had cognizance for nearly one-third of the Air Force annual munitions

monetary requirements during the Vietnam era and will probably assume a larger share during a peacetime period.

Both major commands rely on the Army and the Navy for actual production of the majority of their requirements and on private industry for the remainder. The Air Force's investment in current (1972) dollars is \$.5 billion primarily in development, test and rehabilitation facilities, but this figure includes some equipment provided to private industry for munitions production.

Figure 1 represents a fair approximation of the types and values of the production facilities under the cognizance of the three services in terms of both manufacturing lines and plants. A manufacturing line is defined as that combination of equipment and facilities capable of singular operation to manufacture, load, assemble and pack a type line item of conventional ammunition. These are variably defined as ASOD packages, (requiring Assistant Secretary of Defense approval to establish or modify) and are installed in GCGO, GOCO, and private plants, as well as specially designated equipment in storage.

As can be seen from the foregoing figures, the Department of Defense investment in the conventional ammunition production base is extensive. When combined with the value of the stocks in the war reserve stockpile and the annual procurement investment for a conflict such as the Vietnam era required (approximately \$3 billion annually), the management of the overall program takes on immense proportions.

All three services operate the commodity management on a functional basis within their respective commands and rely on informal coordination across service lines only where needed. The only service to attempt the use of a specialized project management on a matrix basis was the Army under the auspices of the US Army Munitions Command.

Cognizant Service	Government owned		Private Plants (1)	Industrial Agreements(2)	Value (Billions) (3)		
	plants		lines		Govt.	Private	
	GOGO	GOCO					
ARMY	5	25	138	44	305	Land \$9.0 Fac. \$1.8	\$.503
NAVY	12	4	18	2	367	Land \$2.3 Fac. \$.3	\$.019
AIR FORCE	2	0	4	2	46	Land \$.3 Fac. \$.1	\$.015

- Notes: 1. Includes equipment in storage for possible plant installation.
2. Industrial agreements are between DOD and various elements of industry to participate in industrial preparedness for mobilization. Values of land and facilities consigned to these agreements are not included in the last column.
3. Values are in 1972 dollars.
4. Source: References cited; 5, pages 1-23 to 1-28.

Figure 1: The American Ammunition Production Base

Here it was felt that those items largely produced by the Army and requiring interservice coordination could best be managed with designated project managers. Consequently a PM for the 2.75 inch Rocket and a PM for Bombs and Explosives (including fuzes, fins and components), were established primarily to direct the development, production, scheduling and responsive cross service coordination.

Both project management organizations accomplished their mission successfully during the Vietnam conflict. The Office of the PM for Bombs and Explosives was phased out at the end of hostilities when the need for intensive management decreased, and the DCD realigned the procurement assignment for conventional bomb production to the Navy in order to place the producers and the users as closely related as possible.

The PM for the 2.75 inch Rocket was transferred within the Army Materiel Command to the Army Missile Command in June 1973, however it still retains responsibility for tri-service coordination.

The Army also utilized a totally in-house project management concept for its own management of mortar and artillery ammunition, though this also included coordination of support to the Marines. These two PMs operated from a very small matrix organizational base designed primarily to coordinate the development and production aspects of the components within the US Army Munitions Command.

As a more recent development, the Army has established a Project Manager for Modernization of the Army Ammunition Production Base as of June 1973. This office is a matrix organization satellited on the US Army Armaments Command to oversee and coordinate the modernization aspects of the base--a topic that will be discussed below.

Within this background, another major element of the ammunition production base revolved around the estimated condition of the facilities

and equipment. As was indicated in chapter 2, the majority of the facilities were developed and procured in the early 1940's with only little or no improvement and updating since that time. Manufacturing processes date back to methods used as early as World War I and do not reflect current state-of-the-art capabilities.

Subsequent to the mobilization actions of the Vietnam conflict, the Department of Defense initiated several actions to evaluate the management and the condition of the production base. One of these was a commissioning of the Logistic Management Institute (LMI) to conduct an on-going and extensive review of the condition and operation of the DOD ammunition facilities. The LMI study addressed itself primarily to the government owned plants and in summary stated that:

1. The plants are outmoded and in poor physical condition, but continued to produce at rates far in excess of peak World War II rates.

2. The fact that two departments manage the base with occasional duplication and at occasional cross purposes is not effectively employing the limited resources of the government investment, especially for a long range basis. (7)

The LMI study also provided other recommendations concerning layaway practices, maintenance, planning, comparison of private versus government ownership, retention of local managerial personnel, and analysis procedures for the various production lines management.

Simultaneous with the LMI study, the Army realized that numerous technological changes could be made to achieve far greater efficiency and effectiveness. Many of these were available on small scale and could be implemented into the current plants for limited, though obvious, improvement. It soon became apparent that improving dated equipment was only going to have this limited result, and if the production base was to remain viable for any length of time, extensive replacement and modernization needed to be accomplished.

Consequently, an overall modernization plan amounting to \$2.4 billion was proposed in 1968. This was subsequently raised to \$3.6 billion and approved for accomplishment during the period 1971 to 1981. This plan is now under the auspices of the Project Manager referred to above. (5:pp4-12)

With this background describing the production base as it was managed in 1971 and as it is constituted, including a description of the overall condition, the following chapters will describe and analyze improvement efforts being undertaken to solve the wide array of problems related to the production base management.

CHAPTER 4

JOINT SERVICES STUDIES

In 1968, the Department of Defense convened the Joint Logistics Review Board to evaluate all aspects of the DOD logistics systems as they operated in support of a limited conflict such as the Vietnam War. The final report of the board was published in 1969 and includes a portion specifically addressing the conventional ammunition support. (7:pp93-105)

This report recognized certain managerial difficulties in the ammunition procurement methods and in the ammunition production base as well as an appraisal of the declining condition of the facilities and equipment. It further addressed itself to some rather confusing policies regarding the DOD investment in government owned facilities.

Specifically in the managerial area, the board recommended:

- The military departments initiate a joint review of ammunition procurement responsibilities for purposes of recommending existing changes to DOD Instruction 4115.1 (on purchase assignments) including adjustments in existing capability through transfer of facilities as required...

- Commanders with ammunition logistic responsibility in time of war (should) retain a nucleus staff capability in peace... (7:pp146-148)

The Board presented other recommendations concerning supply and support activities, requirements computations, specialized management actions, and procurement policies; however the above two are the most directly applicable toward the follow-on efforts.

Acting on the recommendations of the JLRSB report, and in an ever-growing concern for management improvement in the expensive ammunition production base, the Assistant Secretary of Defense (Installations and

Logistics) in March 1971 requested his counterparts in the three services to establish a joint panel of high level service representatives to study and develop a coordinated management system for the ammunition production base. (5:pp 111)

The study was to be conducted under the auspices of the Joint Logistics Commanders (JLC), consisting of the Commanding General, Army Materiel Command (AMC), the Commanders of Air Force Logistics Command (AFLC) and the Air Force Systems Command (AFSC), and the Chief, Naval Materiel Command (NMC). The panel was to consist of general officers and staffs from each of the three services and was charged to report its findings and recommendations by June 1972. The panel bore the title of The Joint Panel for the Development of a Coordinated Management System for the DOD Ammunition Production Base (JCAP).

The panel and its subordinate task groups examined the requirements as they affect the retention, acquisition, support and release of the production base; operations, including utilization scheduling and coordination; modernization and expansion to match requirements and manufacturing technology; management decision models; management information systems; and organizational policies, procedures, and training. In short, the panel examined every aspect of ammunition management to determine the various effects on the needs of the production base.

The final report of the panel resulted in fifty recommendations to improve the operation of the production base, encompassing every facet of the total DOD base. Twenty-one of the panel's recommendations dealt with a proposed production base management system. Those recommendations peculiar to the management aspects are summarized below:

That there be established by the Joint Logistics Commanders, a Joint Conventional Ammunition Production Coordinating Group (JCAP/CG), with a supporting full-time operating group, to formulate

and operate a coordinated system for the production base management system.

This group should, under the direction of the JLC:

Provide an effective coordination procedure for operation and maintenance of the total DOD conventional ammunition production base.

Exchange information on approved programs, mobilization planning data, and related information to assure coordinated planning at the operating level.

Develop models and management information systems to aid in industrial preparedness planning, five year production allocations, and facility resource allocation.

Exchange information on the introduction of new items in view of their impact on the production base.

Exchange information on production base safety, security and transportation needs common to the entire ammunition production base management.

Exchange information on production base modernization and expansion to match production base requirements.

Attempt to standardize definitions, costing procedures and reporting methods as employed by the services with regard to the ammunition production base. (5:pp x-xcv)

Figure 2 is a schematic diagram of the JCAP proposed management system as it was proposed and implemented by the Joint Logistics Commanders. The Commanding General, US Army Munitions Command, (now the US Army Armaments Command) was appointed the chairman of the JCAP/OG, with the other members from the prime operating commands of each of the three services as shown on the figure. Each member appointed a colonel/captain to sit on the operating group (JCAP/OG). The coordinated management structure is shown on figure 3.

The fact that the members of the JCAP/OG represent the commanding generals of the operating ammunition management agencies within each of these services reflects a dedication to insure compliance with the decisions of the group. These are the individuals that bear the consequences of compliance versus non-compliance and only stand to lose by the latter.

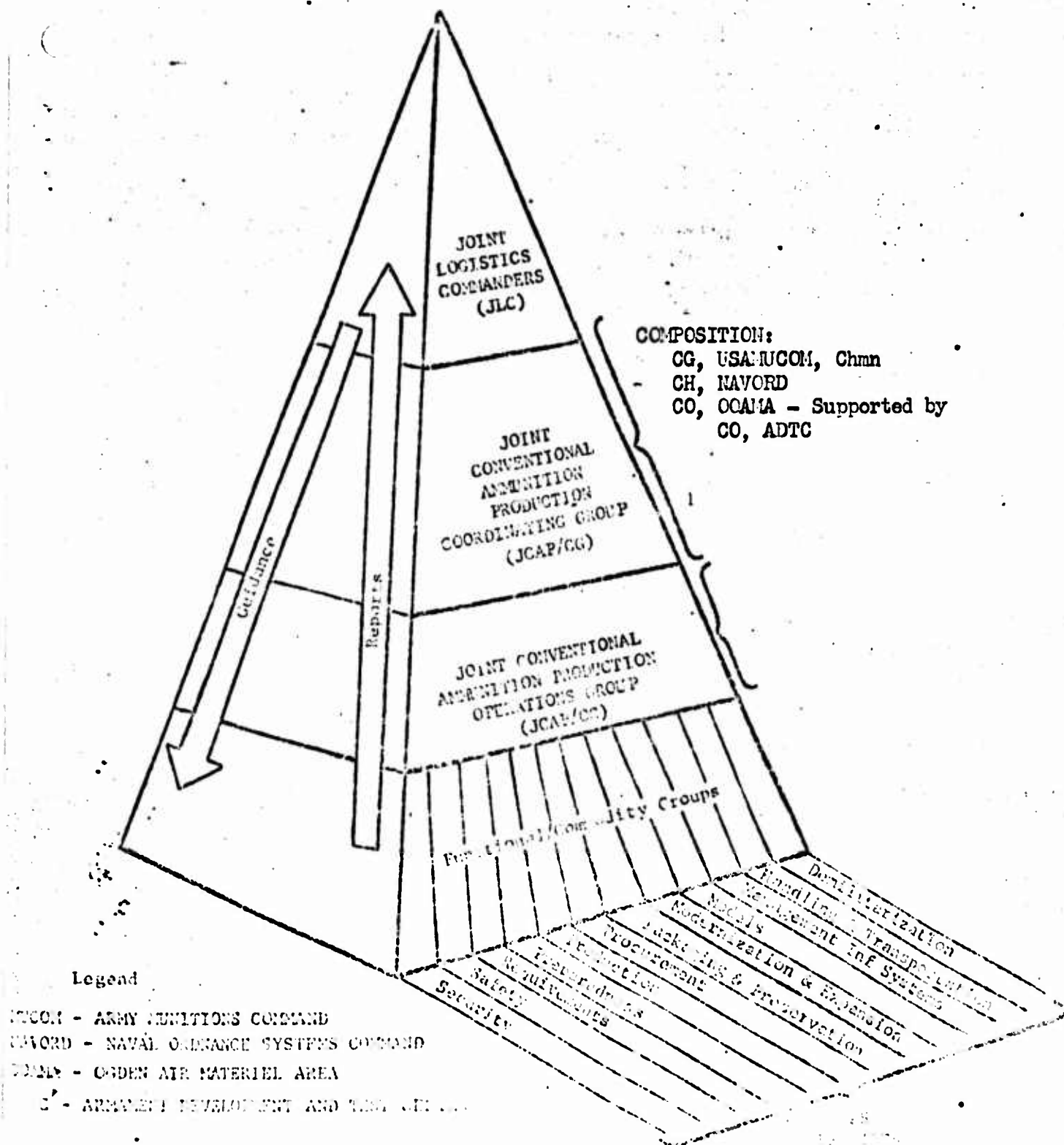


Figure 2: Organizational Concept of Joint Coordinated Ammunition Management Proposal

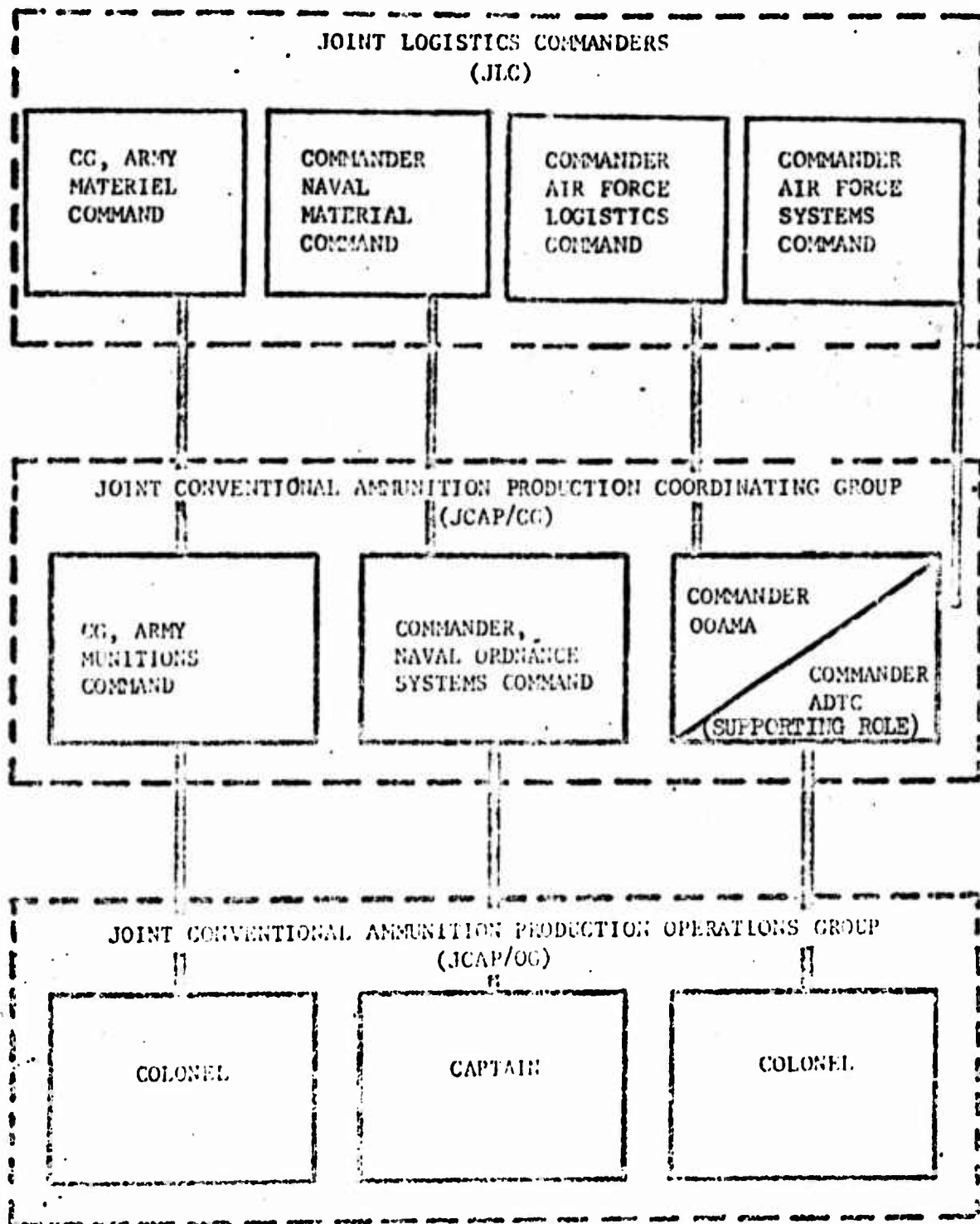


Figure 3: Proposed Organizational Structure: JCAP

This single element of the system takes the proposal out of the "ad hoc" panel concept and places it in that of a true working element dedicated to constructive management.

A particular element of the coordinated management structure surrounds the models and the management information system which are envisioned to be developed. The models to support the coordinated management include such topics as material acquisition for a five year procurement and production plan; item acquisition/production trade-off for decisions regarding stockpile comparison to production capabilities; make or buy analysis for decisions as to where within the base items should be produced; facilities maintenance for comparison of reactivation periods to layaway standards and maintenance policies; industrial preparedness for comparing mobilization assignments to capabilities; and facility modernization and expansion to plan expenditures to meet production requirements. None of these models were in existence at the time of the panels recommendations; however, they adequately reflect the type of decisions facing the coordinated management structure to achieve the most efficient ammunition production base. Indeed, they are the type of management tools that could have been used by each of the services individually; but without total production base input, they would not be as effective as in a coordinated approach.

Like the models, the proposed management information system provides an insight as to the workings of the structure. The data considered by the panel as crucial to a coordinated decision making procedure include such items as:

Peacetime and industrial preparedness requirements data (all services).

Facility capabilities and capacities.

Research and development ammunition items programmed for production.

End item unit production costs.

Modernization and expansion factors.

Manufacturing methods and technology.

Security procedures.

Plans, programs, and budgets pertaining to the ammunition commodity.

Given an idea of the types of information and decision models envisioned for a joint service management structure such as the JCAP/CG and OG, we get some perspective of the problems facing this management system and its purpose for existing. These factors have all been utilized by the individual services previously; however, with a dynamic organizational structure set apart from the day-to-day operations, they can be combined, coordinated, and utilized to the advantage of the entire base as well as the individual services. The problems become very real in terms of decisions, expenditures, individual service policies, and DCD broad goals.

As an implementation plan, the JCAP panel proposed a full establishment of this structure, to include development of the management information system (MIS) and the models over a five year period, with immediate objectives to be accomplished during FY 73, short term objectives to be accomplished in FY 74/75, and longer range objectives geared for FY 76/77. Immediate objectives included establishing the organization, beginning manual reporting, conducting concept studies on the various models and developing the system specifications for the MIS. On the short term basis, the objectives were aimed at continued development of the MIS, operation of the models as available, building files, and programming testing and training personnel toward long-term goals of implementing the over-all system and using it for a coordinated ammunition production base management system.

If approved and successful, the JCAP proposal would represent a first in planned and coordinated management of a commodity common to all services while still retaining the individual service prerogatives and cognizance of their interests. It is implied that the operating commands would comply with the decisions of the JCAP/CG with the goal of a DOD-wide cost effectiveness, however it is not unreasonable to assume cooperation in view of the comparative trade-off advantages to the various services. Besides cost effectiveness, each service would stand to gain sure knowledge of its production requirement satisfactions,—both for peacetime and mobilization needs,—broad knowledge of the production base capabilities, and assured coordination to avoid future crisis management.

CHAPTER 5

EPILOGUE

On 20 June 1972, the Joint Logistics Commanders directed the establishment of the management structure outlined in the previous chapter. Implementation was to begin immediately with regard to the aspects within their (JLC) cognizance. Those recommendations beyond the JLC control were forwarded to the respective Service Secretaries and to the Secretary of Defense as applicable. (5)

At a June 1973 review of the JCAP/CG, the Joint Logistics Commanders approved a modification of the structure to expand the role of the Commander, Armament Development and Test Center as a member of the JCAP/CG for research and development matters, where he had previously been working only in a supporting role to the Commander, Ogden Air Materiel Area under AFLC. Figure 4 reflects the modification to the organization as implemented by this step. This action was taken primarily because of the expanding role of the munitions research and development and its impact on the joint management of the production base.

The full-time staff of the JCAP/CG and its subordinate Operating Group has been proposed to number 55 persons for consolidation and implementation of the management information system and the decision models. Another 108 members are detailed on a part-time basis from the representative commands. These people are not centrally located, but function within their respective operating commands and services as integral parts of the organization. A small matrix organization at the US Army Armaments Command serves as the focal point for all actions of the joint structure. (9)

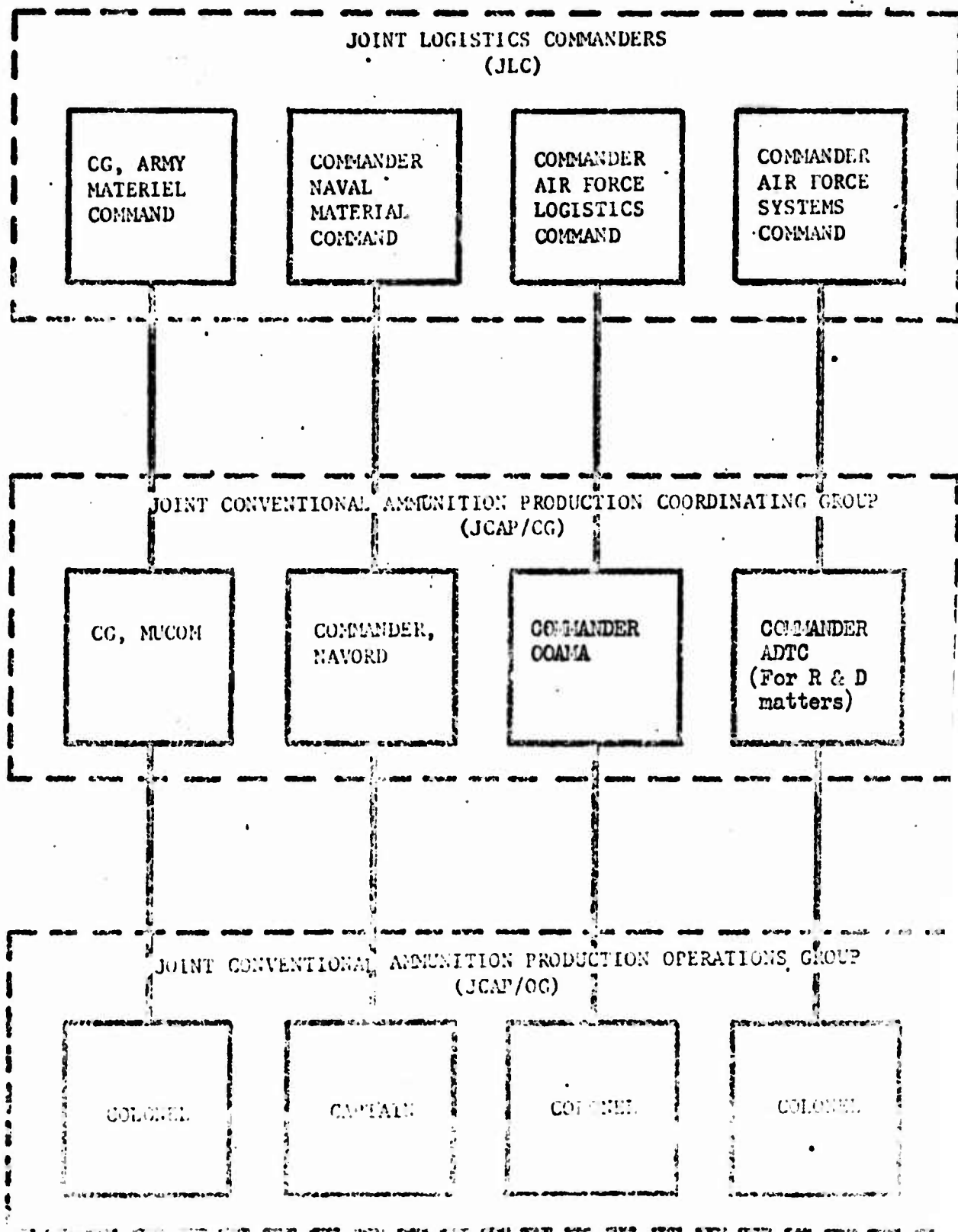


Figure 4: Current Organizational Structure; JCAP

Expressing the confidence of the Joint Logistics Commanders in this management system, the JCAP/CG was also directed to absorb the function of overseeing the Joint Services Explosive Safety Program, previously accomplished by an "ad hoc" group composed of various members of the three services. The JLC further expanded the mission of the JCAP/CG to include all conventional ammunition matters, thereby deleting the restriction to the production base only. Though this aspect still provides, and will continue to provide, the largest purpose and share of the workload to the organization, the JCAP/CG now provides an open forum for the discussion and resolution of a number of interservice problems that continually appear in the over-all management of the ammunition commodity.

To date, the recommendations of the panel have been approved at the Secretary of Defense level, with the exception of four eliminated by events and one partially approved in line with the previous Joint Logistics Review Board recommendations. Four actions requiring the individual Service Secretarial approval are still pending, primarily awaiting staffing action.

CHAPTER 6

CONCLUSIONS

The approval of the Panel's recommendations bespeaks the potential value of a coordinated management structure such as the JCAP/CG and its operating group. It is providing a formalized basis in which to consolidate and carry out effective and efficient DOD planning without elevating problems to the Departmental levels. Judging by the conditions and the concern for the management of the ammunition production base as discussed in chapters 3 and 4, corrective action had to be accomplished, and this proposal is a very viable one. It is especially attractive in view of other alternatives which could have resulted in a "fourth Service," or a DOD level ammunition supply agency, both of which had been discussed. (8, 10)

One of the keys to success in this management structure lies in the joint spirit of the organization at a low enough command level to accomplish the task, but still high enough to represent true military service positions.

Another aspect of the potential success for the coordinated management approach is the fact that the management of such an important and expensive commodity as ammunition is capable of being accomplished without loss to the individual services in terms of command, control and service prerogatives.

It is the writer's belief that the structure being implemented to manage the ammunition production base is the result of extensive, well-reasoned planning and analysis, and will adequately meet the requirement for effective and efficient management of the entire Department of

Defense ammunition production base. The system encompasses the principle of continuity and unity of direction while providing a working base of personnel, information and decision-making tools to insure the most reasonable unified approach to coordinated management within the ammunition supply field.

REFERENCES CITED

1. Constance M. Green, H. C. Thomson and Peter C. Roots, Series, United States Army in World War II, The Ordnance Department, Planning Munitions for War, Washington, Government Printing Office, 1955.
2. H. C. Thomson and L. May, Series, United States Army in World War II, The Ordnance Department, Procurement and Supply, Washington, Government Printing Office, 1960.
3. W. V. Reeder, MAJ. GEN. USA, Korean Ammunition Shortages, Case Material for Teaching Purposes, (unpublished - undated).
4. Department of Defense, Joint Logistics Review Board, Logistics Support in the Vietnam Era, Monograph #2, Washington, Government Printing Office, 1969.
5. Department of Defense, Final Report of the Joint Panel for the Development of a Coordinated Management System for the DOD Ammunition Production Base, Government Printing Office, APSA, Joliet, Illinois, May 1972.
6. DCD DIR. 4115.1 DCD Coordinated Procurement Program: Purchase Assignments, Washington, Government Printing Office, September 1972.
7. Logistics Management Institute, Condition and Operation of the DOD Ammunition Production Facilities, Phase II (Task 68-19), Washington, Government Printing Office, July 1970.
8. Graham W. Rider, LTC, USAF, Unified Logistics - An Unholy Alliance? Air Force Magazine, March 1972.
9. Department of Defense, Annual Report of the Joint Coordinated Ammunition Production Coordinating Group, Briefing to the Joint Logistics Command, 19 June 1972.
10. GAO Report on the Conventional Ammunition Organization and Management, Washington D.C., May 1973.